

Acc. Nr:

AP 0101482

Abstracting Service:

CHEMICAL ABST. 6-7d

Ref. Code:

4R0079

121659s Reactions of n-butylselenomagnesium, -cadmium, and -mercury halides. Vostokov, I. A.; Bychkov, V. T. (USSR). *Zh. Obshch. Khim.* 1970, 40(2), 319-22 (Russ). Et-MgBr from 0.45 g Mg in Et₂O was freed of solvent in a closed system and treated under liq. N cooling with 2.5 g BuSeH (exotherm) to give 100% C₂H₆ and a residue which freed of excess BuSeH gave 95% BuSeMgBr (I) colorless solid, decompd. 280-5°, which with Et₃SiBr in THF in 2 hr at 80° gave 37% BuSeSiEt₃, b_s 98-100°, n_D²⁰ 1.4759. Similarly, BuMgI and BuSeH gave 79% BuSeMgI, which with Et₃GeBr in THF gave after 1 hr at 100° 47.5% BuSeGeEt₃, b_s 105-8°, 1.5074. I and powd. CdCl₂ in THF gave after 2 hr at 50° 48% BuSeCdCl.CdCl₂, decompd. 190-200°; this also formed from BuSeCdCl and CdCl₂ in THF. Et₃GeLi in THF and I gave overnight 90.6% LiBr and 87% BuSeMgGeEt₃, infusible solid, isolated as a 1:1 adduct with THF; H₂O reacted vigorously with it to yield Mg(OH)₂, BuSeH, and BuSeMgI. BuSeHgGeEt₃ and BuSeH in C₆H₆ at 100° 2 hr gave 91% Hg and 74% BuSeGeEt₃. Similarly prepd. were BuSeCdCl, decompd. 145-50°; BuSeHgCl, m. 97-9°; BuSeHgCl.HgCl₂, decompd. 250°; BuSeCdGeEt₃, undistillable yellow oil, n_D²⁰ 1.5710 (oxidizes in air); and BuSeHgGeEt₃, n_D²⁰ 1.5210 (oxidizes in air). G. M. Kosolapoff

REEL/FRAME
19851388

USSR

UDC 621.375.82

BAKSHT, R. B., BYCHKOV, Yu. I., MESYATS, G. A.

"Possibility of Using Vapor Formed Under the Effect of a Powerful Electron Beam on a Target as a Means of Obtaining Coherent Radiation"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Moscow, Soviet Radio, 1972, pp 89-90 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D931)

Translation: The possibility of obtaining metal vapor under the effect of a powerful electron beam on a target formed during pulse vacuum breakdown is discussed. The optimal parameters of such a beam (10^8 watts/cm² with an energy of 100-200 kiloelectron volts) permit the expenditure of an energy equal to the sublimation energy on evaporating one atom. Discharge to the vacuum diode of the storage element with an energy of 450 joules offers the possibility of obtaining a vapor concentration of no less than 10^{17} cm⁻³ in a volume of 20 cm³. The vapor formed can be used as a means of generating radiation.

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1/2 037 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TREATMENT OF PIG IRON WITH LADLE ADDITIONS TO INCREASE THE SERVICE
LIFE OF HEAVY CORRUGATED INGOT MOLDS -U-
AUTHOR-(02)-KLETSKIN, G.I., BYCHKOV, YU.B.
COUNTRY OF INFO--USSR
SOURCE--LITEINOE PROIZV., MAR. 1970, (3), 11-12
DATE PUBLISHED----MAR70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--OPEN HEARTH FURNACE, GRAPHITE, MOLDING MATERIAL, ZIRCONIUM,
ALUMINUM, TITANIUM, PIG IRON, METAL CASTING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1936 STEP NO--UR/0128/70/000/003/0011/0012
CIRC ACCESSION NO--AP0132198
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WEAR OF NODULAR CAST IRON MOULDS (MUCH GREATER THAN 20 TONS) DUE TO LIQUATION OF HYPEREUTECTOID GRAPHITE ON CASTING STEEL FROM OPEN HEARTH FURNACES AND O CONVERTERS CAN BE REDUCED BY LADLE ADDITIONS OF 2-3 KG PER TON OF TI SPONGE. THE TI EXTRACTS N FROM THE MELT, THUS FACILITATING GRAPHITIZATION IN THE EUTECTIC AND EUTECTOID RANGES, AND INCREASING THE PURITY AND PLASTICITY OF THE ALPHA IRON CRYSTALLITES AND THE SIZE OF THE GRAPHITE INCLUSIONS (AVOIDANCE OF TYPE I AND II CRACKING). ZR AND AL LADLE ADDITIONS ARE INEFFECTIVE IN THIS CONNECTION.

UNCLASSIFIED

USSR

UDC: 537.312.62

BARANOV, I. A., BYCHKOV, Yu. F. KORZHOV, V. P., MAL'TSEV, V. A., SLAV-GORODSKIY, M. P., SHTOLEVICH, R. S.

"Effect of Rhodium on the Superconductive Properties of Zirconium and Some of its Alloys"

Moscow, Sverkhprovodyashchiye splavy i soedin.---sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 140-147 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D566 [résumé])

Translation: An investigation was made of the effect which dispersed segregations of a phase having a higher critical temperature than the matrix have on the critical current. Additions of rhodium increase the T_c of zirconium to 6-7 K with formation of solid-solution bcc, and up to 11-12 K with formation of Zr_2Rh . Critical currents were measured on ternary alloys Zr-Nb-Rh and Zr-Mo-Rh. After annealing at 450°C, when only α -phase was segregated, there was a considerable increase in the critical current. After annealing at 550°C, when the larger segregations of α -phase were accompanied by segregations of compound Zr_2Rh which has a high T_c , the critical current was appreciably lower. The results show a higher positive

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USSR

BARANOV, I. A. et al., Sverkhprovodyashchiye splavy i soyedin., "Nauka", 1972, pp 140-147

effect on the critical current of dispersed segregations which are non-superconductive at 4.2 K in a superconductive deformed matrix. Five illustrations, one table, bibliography of four titles.

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ELECTRICAL ENGINEERING
Cryogenics and Superconductivity

USSR

UDC: 537.312.62

GRUZIN, P. L., BYCHKOV, Yu. F., YEVSTYUKHINA, I. A., KRUGLOV, V. S.,
NIKOLAYEV, I. N.

"The Mössbauer Effect in Nb_3Sn as a Function of Heat Treatment"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 42-47 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D549 [résumé])

Translation: The superconductive compound Nb_3Sn displays the so-called "degradation effect" -- an appreciable reduction in T_c when the annealing or sintering temperature is raised to 2000°C. An investigation was made of the influence of heat treatment in a vacuum on the parameters of nuclear gamma resonance. With a rise in annealing temperature a considerable reduction was observed in the width of the NGR line and isomer shift, together with a reduction in absorption probability. The narrowing of the NGR line is due to an increase in the degree of ordering of the structure of the compound Nb_3Sn . It is shown that the degree of ordering can be determined from the absorption probability for different states if the degree of ordering and absorption probabilities are known for two other states. With an

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USSR

GRUZIN, P. L. et al., Sverkhprovodyashchiye splavy i soyedin., "Mauka", 1972, pp 42-47

increase in heat-treat temperature, a change was observed in the density of the 5S-electrons on the Sn nucleus. It is shown that the NGR method is very sensitive to the other tin-containing phases in UbgSn . Three illustrations, one table, bibliography of seven titles.

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USSR

UDC: 621.378.325

TARASENKO, V. F., KURBATOV, Yu. A., BYCHKOV, Yu. I.

"A Nitrogen Pulse Laser With Emission Wavelength of 337.1 nm"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 84-85

Abstract: A nitrogen pulse laser with emission wavelength of 337.1 nm pumped by a transverse electrical discharge is investigated. The supply system utilizes a strip line made of a ceramic material with high permittivity. A maximum peak power of 23 kW is attained when the active length of the discharge is 15 cm. It is shown that when the voltage across the discharge space is increased, there is a rise in the emission power and the optimum pressure. It is established that when the voltage is held constant, the impedance of the laser-produced plasma increases linearly with an increase in the pressure of the working gas. Four illustrations, bibliography of four titles.

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USSR

UDC 621.375.82

TARASENKO, V. F., KURBATOV, Yu. A., BYCHKOV, Yu. I.

"Pulsed Nitrogen Laser With a Wavelength of 3371 Å"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works),
No. 2, Moscow, "Sov. radio", 1972, pp 84-85 (from RZh-Fizika, No 10,
Oct 72, Abstract No 10D944)

Translation: A pulsed nitrogen laser with a wavelength of 3371 Å pumped by a transverse electric discharge was investigated. A ceramic band line with a high dielectric permeability was applied in the supply system. A maximum peak power of 23 kw was obtained with an active discharge length of 15 cm. It was shown that the radiation intensity and the optimal pressure rise with an increase in voltage on the discharge interval. It was established that the resistance of the laser plasma increases linearly with an increase in the pressure of the working gas at constant voltage. Authors abstract.

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USSR

UDC: 621.375.826

TARASENKO, V. F. and BYCHKOV, Yu. I.

"Nitrogen Laser With Transverse Discharge"

Moscow, Pribury i tekhnika eksperimenta, No 1, 1973, pp 183-184

Abstract: This short article describes a power supply system for operation with a transverse discharge nitrogen laser operating at a power level of 300 kW and radiating a wavelength of 3371 Å. A schematic of the power supply, made up of ceramics with high dielectric permeability, is given together with some technical details concerning the laser itself. A photograph of the laser's external view is also provided. It is stated that the equipment permits radiation with other gases as well.

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USSR

UDC: 537.312.62

BYCHKOVA, M. I., KOZLOVA, N. D., LYSENKO, Ye. N., BARON, V. V., SAVITSKIY, Ye. M., TUREVSKIY, V. M.

"Shielding Properties of Alloys in the Niobium-Titanium System"

V sb. Probl. sverkhprovodnykh materialov (Problems of Superconducting Materials—collection of works), Moscow, "Nauka", 1970, pp 166-172 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D569)

Translation: The authors study the distribution of the magnetic field in superconducting magnets for quantum paramagnetic amplifiers with the use of shielding plates made from niobium-titanium alloy. It is shown that shields of NT-1 alloy can partially screen the field and appreciably improve field homogeneity. At a magnetic field strength of 4,000 oersteds, a uniformity of 10^{-3} is obtained in a volume of $5 \times 8 \times 120$ mm. Five illustrations, one table, bibliography of thirteen titles. Resumé.

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USSR

UDC 669.293.5.295.018.58

BYCHKOVA, M. I., KOZLOVA, N. D., LYSENKO, Ye. N., BARON V. V., SAVITSKIY,
~~Ye. M.~~, TUREVSKIY, V. M.

"Screening Properties of Alloys in the Niobium-Titanium System"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 166-172. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 1783 by the authors).

Translation: The distribution of the magnetic field in superconducting magnets for quantum paramagnetic amplifiers using screening plates of Nb-Ti alloys is studied. It is demonstrated that screens of NT-1 alloy can partially screen the field and significantly improve its homogeneity. With a magnetic field intensity of 4,000 oe, a homogeneity of 10^{-3} was produced in a volume of $5 \times 8 \times 120$ mm. 5 figs; 1 table; 13 biblio refs.

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Transformation and Structure

USSR

UDC: 620.181:546.821.382

SUDAREVA, S. V., BUYKOV, N. N., VOZILKIN, V. A. and BECHKOVA, M. I., Institute of Physics of Metals, Academy of Sciences USSR

"Investigation of the Occurrence of Strain Contrast According to the Position of the Line of No Contrast"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 87-96

Abstract: The nature of strain contrasts in the form of a pair of dark segments with a line of zero intensity, observed on electron microphotographs of Ti-Nb alloys after tempering, was investigated using the strain contrast theories. The form of alpha-phase particles and the geometry of stress fields near them were studied. The arrangement of atoms in the (110) beta-phase and in the (0001) alpha-phase planes is given. Experiments were carried out on a Ti-50% Nb alloy, with tempering at 500°C for different times, and on a Ti-39% Nb alloy after tempering at 450°C for 15 min. The results are presented in the form of bright-field microphotographs of the alloy structure after hardening and tempering for various foil orientations and effective reflections. It is shown that the observed contrast is not connected with interstitial loops but results from

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USSR

SUDAREVA, S. V., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 87-96

fields of coherent strain near the alpha-phase, and sometimes near the omega-phase particles, depending on the alloy structure state. The observed strain contrast confirmed the previously obtained theoretical and experimental data on strain fields near ω - particles, and also certain aspects from the theory of field images. It is noted in the conclusion that the Ti-39% Nb alloy hardened according to the B procedure disintegrates more slowly than that hardened by the A procedure. The omega-phase particles grow to large sizes; they retain the coherent bond and are present in great quantities in the alloy after 1 hour of annealing. However, metastable alpha-phase particles are present in the alloy. The experimental results obtained on the Ti-39% Nb alloy structure will be used in the future to establish the relationship between the superconducting properties and the structure.

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1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ORIGIN OF DEFORMATION CONTRAST STUDIED ON THE BASIS OF THE POSITION
OF THE CONTRAST FREE LINES IN TITANIUM AND NIOBIUM ALLOYS -U-
AUTHOR--(04)--SUDAREVA, S.V., BUINOV, N.N., VOZILKIN, V.A., BYCHKOVA, M.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 87-96 **B**
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--TITANIUM ALLOY, NIOBIUM, ELECTRON MICROSCOPY, METAL
DEFORMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0190 STEP NO--UR/0126/70/027/001/0037/0086
CIRC ACCESSION NO--AP0054986
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054986

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AFTER TEMPERING OF TI-NB ALLOYS THERE IS OBSD. ON ELECTRON MICROGRAPHS OF SUCH ALLOYS A CONTRAST IN THE FORM OF PAIRS OF DARK SEGMENTS WITH A ZERO INTENSITY LINE. THE NATURE OF THESE DEFECTS WAS STUDIED WITH THE AID OF THE DEFORMATION CONTRAST THEORY. A METASTABLE ALPHA PHASE WAS OBSD., COHERENTLY BONDED WITH THE MATRIX. THE OBSD. CONTRAST IS NOT ASSOC. WITH VACANCY LOOPS, BUT IS CAUSED BY COHERENT DEFORMATION FIELDS AROUND THE PARTICLES OF THE ALPHA PHASE AND SOMETIMES THE OMEGA PHASE, DEPENDING ON THE STRUCTURAL STATE OF THE ALLOY.

UNCLASSIFIED

Epidemiology

JSSR

UDC 616.988.25-036.21(474.5)

CHUMAKOV, M. P., MOTEYUNAS, L. I., BYCHKOVA, M. V. and VARGIN, V. V., Institute of Polyomyelitis and Viral Encephalitides, Academy of Medical Sciences USSR, Moscow, and Lithuanian Republic Sanitary-Epidemiological Station, Vilnius

"Study of Natural-Focus Infections in the Lithuanian SSR. I. Rate of Infection of Ixodid Ticks with Uukuniemi and Tickborne Encephalitis Viruses in Different Ecological and Faunal Regions"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 5, 1973, pp 83-87

Abstract: A total of 29 virus strains - 12 tickborne encephalitis and 17 Uukuniemi -- were isolated from about 14,000 adult ticks collected from 1969 to 1971 in 4 of the 5 ecological and faunal regions of Lithuania. (Two Uukuniemi virus strains isolated in 1970 from Ixodes ricinus ticks were the first strains of this virus to be found in the USSR). Tickborne encephalitis virus strains were isolated both from Ix. ricinus (11) and from Ix. persulcatus (1), while Uukuniemi virus strains were isolated only from Ix. ricinus. These arboviruses were isolated almost 3 times as often from ticks collected in June as from those collected in August. The number of individuals immune to Uukuniemi virus in the regions where it was isolated was 4.8 times greater
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USSR

ChUMAKOV, M. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immuno-
biologii, No 5, 1973, pp 83-87

than in other regions (17.3 and 3.6%, respectively). Thus, the level of
immunity to this virus is directly correlated with the infection rate of the
ticks.

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USSR

UDC 538.565

BYCHKOVA, N. N., KULIK, I. O., Physico-technical Low Temperature Institute of the Ukrainian SSR Academy of Sciences, Khar'kov

"Nonlinear Effects in Superconducting Resonators"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 584-590

Abstract: A study was made of the problem of the generation of harmonics in a superconducting resonator with a high amplitude of the high-frequency field and in the presence of a parallel surface of a constant magnetic field. In spite of the smallness of the transformation coefficient for single reflection of the wave from the superconductor ($R_m \sim 10^{-8}-10^{-10}$), the total power transformation coefficient to the harmonic power is defined by the product QR_m (Q is the Q-factor), and under optimal conditions it can reach a value of $\sim 1\%$. The incidence of the plane electromagnetic wave on a superconducting half-space is investigated, and the intensity and spectral composition of the reflected wave are calculated. A similar statement of the problem was investigated previously [M. A. Fedorov, Pis'ma ZhETF, No 9, 639, 1969; ZhETF, No 59, 1716, 1970]. However, in those papers the calculation was performed by amplitude expansion of the field. In the present article, the case of arbitrary

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USSR

BYCHKOVA, N. N., et al., Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 584-590

intensity is investigated, and the expansion parameter is the dimensionless impedance [L. D. Landau, et al., Elektrodinamika sploshnykh sred, Gostekhizdat Press, 1957]) $\zeta = (\omega/c)|\delta|$ which is small by comparison with one (δ is the complex "depth of penetration"). Within the framework of the investigated model under optimal conditions ($h_1 \sim 1$), the product QR_m can be on the order of 10^{-2} .

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USSR

UDC 632.95

KALABINA, A. V., BYCHKOVA, T. I., STEPANOV, D. Ye., KRON, V. A.

"Synthesis of New Physiologically Active Compounds Based on Aroxyethylenes"

V sb. Khimiya atsetilena (Chemistry of Acetylene--Collection of Works),
Moscow, Nauka, 1972, pp 121-125 (from RZh-Khimiya, No 6 (II), Abstract No
6N610)

Translation: Substances with the formula $\text{CHXX}'\text{CH}(\text{OR}')\text{S}(\text{S})\text{P}(\text{OR})_2$ (I) were synthesized and tested, (X, X', R, R', the boiling point °C/mm, d_{20}^{20} and n_{20}^{20} are presented): Cl, Cl, Et, 2-MeC₆H₄, 140-5/0.03, 1.2674, 1.5540⁴; Cl, Cl, Et, 4-MeC₆H₄, 160-2/0.07, 1.2748, 1.5540; Cl, Cl, Et, 3-MeC₆H₄, 133-6/0.02, 1.2500, 1.5498; Cl, Cl, Et, 4-ClC₆H₄, 154-9/0.05, 1.3593, 1.5632; Cl, Cl, Et, 2,4-Cl₂-C₆H₃, 157-162/0.04, 1.3923, 1.5672; Cl, Cl, Me, Ph, 140-2/0.04, 1.4100, 1.5772; Cl, Cl, Me, 4-ClC₆H₄, 150-7/0.03, 1.4310, 1.5812, H, Br, Et, Ph, --, 1.3535, 1.5680; Cl, Br, Et, Ph, --, 1.4153, 1.5700; Br, Br, Et, Ph, --, --, 1.5820; and also CH₂ClCH(OPh)SCOMe, boiling point 90-1°/0.1, melting point 41-2°; CH₂ClCH(OC₆H₄Me-2)SCOMe, boiling point 91-3°/0.07, melting point 43°; CHCl₂-CH(OPh)SC(S)NEt₂, melting point 60-1°. The I reveals high activity with respect to the tetranychidea superfamily and houseflies. The tests demonstrate that the adducts of vinyl esters of phenols with cyclopentadiene and
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USSR

KALABINA, A. V., et al., V sb. Khimiya atsetilena, 1972, pp 121-125

its derivatives are significantly inferior to the compounds used at the present time with respect to fungicidal, insecticidal and acaricidal activity. The pesticidal activity of the adducts increases as a result of the addition of thylating reagents.

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1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE IMMEDIATE AND REMOTE RESULTS OF VAGOTOMY IN DUODENAL PEPTIC
ULCER -U-
AUTHOR--(04)-UTESHEV, N.S., PAKHOMOVA, G.V., BYCHKOVA, T.I., SEMENOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 6, PP 35-39
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DUEDENUM, SURGERY, NERVE TISSUE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605005/D01 STEP NO--UR/0531/70/000/006/0035/0039
CIRC ACCESSION NO--AP0139710
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE N. V. SKLIFOSOVOSKY INSTITUTE 75 PATIENTS WITH COMPLICATIONS OF DUODENAL PEPTIC ULCERS WERE SUBJECTED TO VAGOTOMY AND ANTRECTOMY. VAGOTOMY WAS PERFORMED SUBDIAPHRAGMATICALLY. SECTION OF THE VAGUS NERVES IN THE IMMEDIATE VICINITY TO THE LESSER CURVATURE OF THE STOMACH WAS ACHIEVED BY PRESERVATION OF HEPATIC AND INTESTINAL BRANCHES OF THE VAGUS NERVES. THE EXPERIENCE OF TREATMENT HAS SHOWN THAT THE PATIENTS REQUIRE FOR TWO-THREE POSTOPERATIVE DAYS CONSTANT ASPIRATION FROM THE STOMACH FOR THE RESTORATION OF ITS TONE. OUT OF 75 PATIENTS IN 3 THERE WAS OBSTRUCTION OF THE ANASTOMOSIS FOR 14 DAYS, WHICH NORMALIZED UNDER THE INFLUENCE OF CONSERVATIVE MEASURES. THE REMOTE RESULTS WERE STUDIED IN 40 PATIENTS. AN ANALYSIS OF THESE DATA/HAS SHOWN THAT AT PERIODS FROM 3 MONTHS TO 4 YEARS AFTER VAGOTOMY WITH ANTRECTOMY THERE OCCUR NO PRONOUNCED CHANGES IN THE FUNCTION OF THE LIVER, PANCREAS AND SMALL INTESTINE. A PERSISTENT ACHYLIA WAS NOTED AFTER THE EXAMINATION OF THE GASTRIC SECRETION. THERE WERE SEEN NOT SIGNS OF THE DUMPING SYNDROME, THE DEVELOPMENT OF PEPTIC ULCERS OR DIARRHEA IN THE GROUP OF PATIENTS.

FACILITY: I-YA KHIRURGICHESKAYA KLINIKA POMOSHCHI IMENI N. V. SKLIFOSOVSKOGO, MOSKVA.

UNCLASSIFIED

USSR

UDC 541.183.12

SOLDATOV, V. S., and BYCHEKOVA, V. A., Institute of General and Inorganic Chemistry, Academy of Sciences, BSSR, Minsk

"Ion Exchange in Polycomponent Systems. Calculation of the Ion Exchange Equilibrium in the Ternary System $K^+-NH_4^+-H^+$ From Binary System Data"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 9, Sep 70, pp 2293-2296

Abstract: Using the method for calculation of the equilibrium liquid-vapor in ternary systems from data obtained in binary systems, the authors calculated activity coefficients for NH_4^+ , K^+ , and H^+ resinate in ternary mixture from data on exchange equilibria of $NH_4^+-H^+$, K^+-H^+ , and $K^+-NH_4^+$ systems. Comparison of the data on phase composition of the solution obtained experimentally and by calculation showed a remarkable agreement.

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USSR

UDC 621.791.011

ABRAMOV, V. V., BYCHKOVA, Z. S., MESHCHERYAKOV, V. N., and SHORSHOROV,
M. KH., Moscow

"Kinetics of Surface Chemistry of the Localized Chemical Reaction Between
Copper and Nickel in the Solid Phase During Welding"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul/Aug 72, pp 96-101

Abstract: Fractographic analyses of the surfaces of reactions between copper and nickel in solids subjected to heat and pressure have shown that, in metals having very different resistances to plastic deformation, there is an increase in the bonding strength due to the deformation of microdendrites. The kinetics of the increase in the bonding strength closely follow the kinetic plastic deformation of the microdendrites of nickel. The relative size of the increase in strength may be approximated from the amount of deformation of the microdendrites or of the contact surfaces of the microdendrites on the welding surfaces of nickel.

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EXTRACTION OF FLUORIDE IONS BY METAL BIS(2,ETHYL,HEXYL) PHOSPHATES
-U-
AUTHOR--(02)-KLETENIK, YU.B., BYKHOVSKAYA, I.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 351-7 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORIDE, ION, PHOSPHATE, CHEMICAL ANALYSIS, SOLVENT
EXTRACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1902 STEP NO--UR/0075/70/025/002/0351/0357
CIRC ACCESSION NO--AP0118864
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. F CAN BE EXTG. IN THE PRESENCE OF CERTAIN METALS BY SOLNS. OF BIS(2-ETHYLHEXYL) H PHOSPHATE (I) IN VARIOUS DILUENTS. THE EXTN. DEPENDS TO A GREAT EXTENT ON THE NATURE OF THE DILUENT AND IS THE MOST COMPLETE FOR TETRAVALENT METALS. DURING THE EXTN. WITH 0.2N ACID SOLNS. THE F DISTRIBUTION COEFF. DOES NOT DEPEND ON THE NATURE OF THE MINERAL ACID AND IS EQUAL TO 20-5. WHEN THE ACID CONCN. INCREASES, THE COEFF. INCREASES AS WELL, AND IS THE HIGHEST IN THE PRESENCE OF HClO SUB4. THE MOST EFFECTIVE EXTRANT IS Zr BIS(2,ETHYLHEXYL) PHOSPHATE. THE EQUIL. IS ATTAINED RAPIDLY. THE M:F RATIO IN THE EXTG. COMPLEX IS 1:1. CONDITIONS FOR F STRIPPING WERE FOUND AND A METHOD FOR F DETN. IN THE STRIPPING SOLN. WAS PRESENTED. MIX 10 ML OF THE SAMPLE AND 2-5N ACID (H SUB2 SO SUB4, HCL, HClO SUB4) WITH 10 ML I IN HEXANE CONTG. 45 MG Zr FOR 1 MIN, WASH THE EXT. TWICE WITH 5 ML 2N HCL BY SHAKING FOR 1 MIN AND REEXT. F WITH 2 ML BU SUB3 PO SUB4, 1 ML ME SUB2 CO, AND 10 ML 0.35N NaOH, THEN WITH 10 ML 0.1N NaOH, BY SHAKING FOR 15 MIN EACH TIME. ACIDIFY THE COMBINED EXTS. WITH 2 ML 5N HCL, DIL. TO 50 ML WITH H SUB2 O, FILTER, AND DET. F PHOTOMETRICALLY IN AN ALIQUOT. FACILITY: INST. PHYSICOCHEM. PRIME. MINER. RAW MATER. PROCESS., NOVOSIBIRSK, USSR

UNCLASSIFIED

USSR

UDC 577.391.612.112.92.086.3

BYCHKOVSKAYA, I. B., and OCHINSKAYA, G. K., Laboratory of Experimental
~~Cytology and Histology~~, Roentgenological and Radiological Institute,
Leningrad

"Correlation Between the Dynamics of Postirradiation Death of Amoeba and the
Irradiation Dose"

Leningrad, Tsitologiya, Vol 14, No 1, 1972, pp 137-140

Abstract: Amoeba proteus, cultivated in individual lines, were irradiated with 190 kv X-rays in doses ranging from 0.1 to 400 kr. The mortality of the cells was not strictly proportional to the dose. After 0.1-40 kr, 50% of the cells were dead in 40 days, and 85-100% were dead in 80 days, regardless of the dose. In nonirradiated controls, only 7% died in 80 days. In the middle range of 60-120 kr, the mortality rate increased with increasing doses. In the high range of 150-400 kr, the correlation was absent again: most cells died in 2 days, with only a few surviving up to the 8th day. Additional determinations revealed that the cells survived up to the 27th generation after low irradiation, up to the 7th generation after medium irradiation, and only one generation after high irradiation. The results indicate that, contrary to the prevailing belief, Amoeba proteus is very sensitive to X-rays, since even doses 1/2

USSR

BYCHKOVSKAYA, I. B., and OCHINSKAYA, G. K., Tsitologiya, Vol 14, No 1, 1972,
pp 137-140

as low as 0.1 kr are lethal though the damage caused by the X-rays may be
transmitted over many cell divisions to become lethal only in the 27th
generation.

2/2

- 77 -

1/2 021 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—DEPENDENCE OF THE PROTECTIVE EFFECT OF HYPOXIA ON THE RADIATION
DOSE RATE —U—
AUTHOR—(02)—BYCHKOVSKAYA, I.B., SHIFFER, I.V.
COUNTRY OF INFO—USSR
SOURCE—RADIOBIOLOGIYA 1970, 10(11), 135-7
DATE PUBLISHED—70
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS—CARCINOMA, GAMMA IRRADIATION, COBALT ISOTOPE, HYPOXIA,
RADIATION PROTECTION
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRA--3001/1840 STEP NO--UR/0205/70/010/001/0135/0137
CIRC ACCESSION NO--AP0127250
UNCLASSIFIED

2/2 021
CIRC ACCESSION NO--AP0127250 UNCLASSIFIED PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROTECTIVE EFFECT OF HYPOXIA
(7PERCENT O) WAS STUDIED ON THE ASCITES FORM OF MOUSE EHRLICH CARCINOMA,
GAMMA IRRADIATED (PRIME60 CO) AT 2000 R, 12.2, OR 2.0 R-MIN. THE WT. OF
THE TUMOR DEVELOPING AFTER INJECTING 2 TIMES 10 PRIME6 CELLS INTO THE
MOUSE FCCT AND IRRADIATING ON THE 6TH, 8TH, AND 9TH DAY UNDER HYPOXIC
CONDITIONS WAS DETD. WITH THE 12.2 R-MIN IRRADN. DOSAGE, HYPOXIA HAD A
DISTINCT PROTECTIVE EFFECT, WHILE AT 2.0 R-MIN SUCH PROTECTION WAS
PRACTICALLY ABSENT. FACILITY: TSENT. NAUCH.-ISSLED.
RENTGENO-RADIOGL. INST.: LENINGRAD, USSR.

UNCLASSIFIED

Beryllium

USSR

UDC: 669.725.472

BYDON, V. D., YEVSEYEV, Yu. N., ZAZUBIN, A. I., KUNAYEV, A. M.

"Potentials of Beryllium Electrode in a Melt of Lithium and Beryllium Fluorides"

Potentsialy Berilliyevogo Elektroda v Rasplave Ftoridov Litiya i Berilliya
[English version above], Alma-Ata, 1972, 6 pp (Translated from Referativnyy
Zhurnal Metallurgiya, No 8, 1972, Abstract No 8G194DEP, by the authors).

Translation: The potentials of a Be electrode were measured in the system of
Li and Be fluorides with a concentration of BeF_2 in the mixture of 30 to 60
mol. % in the 500-800° temperature interval. The temperature dependences of
the Be electrode potentials were established for concentrations of 30, 40, 54
and 60 mol. % BeF_2 in a melt of LiF-BeF_2 , which are described by equations for
the ratio in a Cl-Ag comparison electrode: $\phi_{30\%} = 2.247 + 1.8 \cdot 10^{-4} \cdot T, v$, $\phi_{40\%} =$
 $= -2.214 + 1.0 \cdot 10^{-4} \cdot T, v$, $\phi_{54\%} = -2.047 + 2.03 \cdot 10^{-4} \cdot T, v$, $\phi_{60\%} = -1.920 +$
 $+ 2.07 \cdot 10^{-4} \cdot T, v$.

1/1

USSR.

UDC 576.858.75(A2).06

RITOVA, V. V., SCHASTNYI, E. I., OGANESYAN, O. T., CHEBECTAREV, Y. V., MOISEYEV, V. P., LARIONOV, A. S., BYKOVSKIY, A. E., SOKOLOVA, N. N., and MEL'NICHENKO, YE. N., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Study of Influenza A2 Virus Strains Isolated During the 1968-1969 Epidemic from Children in Moscow and in the Moscow Region"

Moscow, Voprosy Virusologii, No 3, May/Jun 1971, pp 291-196

Abstract: Since 1957, there have been five influenza epidemics in the USSR caused by the A2 virus: in 1957, 1959, 1962, 1965 and 1968-1969. The last one was produced by a newly formed variant of the virus and began in July in Hong-Kong, subsequently spread over Japan, and hit the countries of South-east Asia and the US. In fall 1968 there was a sharp rise in the influenza incidence in England and in other countries of Central Europe. In December, individual A2 and B influenza foci were reported in the Soviet Union in organized children's collectives (child care centers, schools, etc), and by the middle of January in many cities of the USSR, the incidence of influenza surpassed the mean seasonal rate by a factor of five. From 350 sick children 141 strains of the flu virus were isolated from nasopharyngeal washings.

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USSR

RITOVA, V. V., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 291-296

Diagnosis was confirmed serologically. All strains had high receptor activity and were antigenically identical. Neutralization tests showed that the 1969 flu virus is not a new serotype. A structural study showed that the virus consisted of spherical (diameter 2000-3500Å) and filiform. (diameter of the nucleus 700-900Å, length to several microns) structures. Sera from guinea pigs and horses inhibited hemagglutination of the newly separated strains. The effect of sera was not completely removed after heating to 57°C for 30 minutes and processing with KIO_4 ; but was removed by treatment with cholera vibrios. Only two strains were inhibitor-resistant, all remaining strains were inhibitor-sensitive. The isolated strains were readily adaptable to white mice and from the second or third passage produced death and lung lesions in test animals. Also, in mice, the strains exhibited toxic properties. The immunological responses in convalescents and in immunized animals were high.

2/2

- 46 -

Acc. Nr: AP0044023

B

Ref. Code: UR 0240 2

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 2, pp 52-56

EXPERIMENTAL STUDY OF SHORT-LIVING DAUGHTER
PRODUCTS OF RADON IN THE RESPIRATORY TRACT

V. N. Kirichenko, Dzh. G. Khachirov, S. A. Dubrovln,
Klyuch, V. Ye.; Bykhovskiy, A. V.

One should know the nature of the isotopes distribution in order to asses the dosage load on basal cells of the bronchial epithelium in different lengths of the respiratory tract following Inhalation of radon and of its daughter products. Experimental investigations carried out with the aid of a specially elaborated method of direct alpha-spectrometry of the preparations helped to clear up the nature of the radon daughter products distribution in the mucosa of bronchial epithelium of dogs and rabbits. These data enable dosage loads on the basal cells of the bronchial epithelium to be measured more exactly when the air containing RaA, RaB, RaC and RaC' isotopes is inhaled by experimental animals.

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1/2 - 025

UNCLASSIFIED

PROCESSING DATE--18SEP71

TITLE--EFFECT OF HEAT TREATMENT ON THE STRUCTURE OF HIGHLY ORIENTED KAPRON

SPUN THREADS -U-

AUTHOR--(05)-NOSOV, M.P., MIKHLINA, V.V., PAKHOMOVA, L.N., OLEYNIK, V.G.,
BYCHKOVSKIY, N.I.

COUNTRY OF INFO--USSR

B

SOURCE--KHIM. VOLOKNA 1970, (1), 18-21

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAPRONE, IR SPECTRUM, MOLECULAR STRUCTURE, THERMAL EFFECT,
MACROMOLECULE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/1820

STEP NO--UR/0183/70/000/001/0018/0021

CIRC ACCESSION NO--AP0100394

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100394

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF HEAT TREATED
HIGHLY ORIENTED KAPRON (I) YARN (93.4

UNCLASSIFIED

CS

AP9018804

CA 6/69

UR/0183

97851j Properties of a Kapron fiber modified by semicarbazide. Kut'ina, L. V.; Zhigotskiy, A. G.; Solov'eva, L. S.; Rychkovskiy, N. I.; Pakhomova, L. N.; Kudryavtsev, G. I. (Kiev. Filial VNIIV, Kiev, USSR). *Khim. Volokna* 1969, (1), 53-5 (Russ). The effects of semicarbazide (I) on the phys.-chem. properties of Kapron (II) fibers were studied. II fibers were impregnated with I for 5-20 hrs. at 80-100°, then subjected to thermal treatment in a N stream for 6 hrs. at 130°. II fibers modified with I had higher thermal stability and flexural and tensile strengths, presumably due to the formation of chem. bonds between the reactive polyamide groups and I mols. II fibers modified with I also exhibited improved strength.

CKJR

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1929

2119

USSR

UDC 616.935-092-097.29

BYCHKOVSKIY, V. N., Docent, Chair of Pediatric Infectious Diseases,
Crimean Medical Institute, Simferopol'

"The Participation of Biologically Active Substances in the Pathogenesis of
Dysentery"

Moscow, Sovetskaya Meditsina, No 5, 1972, pp 30-35

Abstract: The significance of active histamine, acetylcholine, and their inhibitors in blood in the pathogenesis of dysentery is examined. A group of 147 children with severe dysentery was studied. The bowel was the site of origin of the substances. Histamine and acetylcholine were found to increase in blood in direct correlation with the severity of the disease. Inhibition of these substances decreased correspondingly, allowing histamine and acetylcholine to have pathogenic effects upon the organism. These effects included disturbance of capillary circulation in the bowel wall, increased permeability of vascular walls, and general edema. This disturbance may cause hemorrhage, erosions and ulcers. The substances also appear to contribute to bowel muscle spasm, strengthened peristalsis and defecation. It has been further shown that blood histamine increases the permeability of the hematocencephalitic barrier. The appearance of meningoencephalitis may be explained by this

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USSR

BYCHKOVSKIY, V. N., Sovetskaya, Meditsina, No 5, 1972, pp 30-35

action with penetration of endotoxins into the CNS. The inclusion of anti-histamines and other desensitizing preparations in treatment of severe and moderate forms of dysentery is indicated.

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USSR

UDC 621.311.21.001.57

RYABKIN, G. M., BYDIN, A. L.

"Hydraulic Studies of the Composition of the Riga Hydroengineering Complex"

V sb. Nauchn. issled. na gidrotekhn. v 1969 g. T. 1 (Scientific Research in Hydroengineering in 1969. Vol 1 -- collection of works), Leningrad, Energiya Press, 1970, pp 268-269 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 D13L)

Translation: The Riga Hydroelectric Power Plant -- the lower stage of the cascade of hydroelectric power plants on the Daugava River -- is designed for operation under peak conditions with daily runoff regulation. The goals of the hydraulic research were the following: to study versions of headraces and tail-races; to test the bracing of the base of the upstream escarpment of earthen dams; to select the length of the separating pier between the hydroelectric power plant and the spillway. The studies were performed on a 1:75 scale three-dimensional model of the hydroengineering complex for the case of passage of a calculated flow through the structure with a 0.1% probability of being exceeded ($Q = 10,700 \text{ m}^3/\text{sec}$) and for the normal operational flow rate ($Q = 2,580 \text{ m}^3/\text{sec}$). Recommendations which were used in the operating design were developed from the research results.

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USSR

B

UDC: 541.183

BYERINH, B. P., PAVLYUCHYENKO, N. M., SYERPINSKIY, V. V., Institute
of Physical Chemistry, Moscow, Academy of Sciences USSR

"Temperatures and Entropies of Adsorption in a System of Binary
Mixture of Vapors -- Non-Porous Adsorbent"

Minsk, Vestsi Akademii Navuk Belaruskay SSR, No 3, 1970, pp 5-8

Abstract: The authors present theoretical interpretation of the
isobaric curves and graphs obtained by other workers experimenting
with graphitized lampblack as a polymolecular adsorbent of chloro-
form and acetone.

1/1

- 8 -

USSR:

UDC 547.558.1

CHERNYSHEV, Ye. A., BYGERENKO, Ye. F., and AKSENOV, V. I.,

"Organophosphorus Heterocyclic Compounds. I. Pyrolytic Cyclization of o-Biphenyloxydichlorophosphine in Gas Phase"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 800-804

Abstract: Passing vapors of o-biphenyloxydichlorophosphine (I) through a quartz tube at 550-600° forms 9-chloro-9-phosphafluorene (III) and 10-chloro-10-oxy-10-phospha-9-oxa-9,10-dihydrophenanthrene (IV) instead of the expected 10-chloro-10-phospha-9-oxa-9,10-dihydrophenanthrene (II). In addition to (I), (III), and (IV), the condensate also contained PCl_3 and traces of biphenyl, o-chlorobiphenyl, and dibenzofurane, the last three compounds forming probably due to disproportionation of the substituents on the phosphorus atom. When (I) was diluted 10 fold with benzene no (III) or (IV) formation was observed. Specially prepared (II) was found to be stable under above pyrolytic conditions, yielding no (III) or (IV); it could not be considered an intermediate product.

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1/2 016
TITLE--FOR THOSE WHO ARE IN SPACE -U- UNCLASSIFIED
AUTHOR--BYGUYEV, V. *B*
COUNTRY OF INFO--USSR
SOURCE--SOVetskaya, LITVA, JUNE 10, 1970, P 3, COLS 5-7
DATE PUBLISHED-----70
PROCESSING DATE--11SEP70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SPACE MEDICINE, DIET, COSMONAUT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0805 STEP NO--UR/9020/70/000/000/0003/0003
CIRC ACCESSION NO--AN0104245
UNCLASSIFIED

2/2- 016


UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0104245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE INTRODUCTION TO THE ARTICLE WHICH DEALS WITH THE ASTRONAUT'S DIET, ITS AUTHOR, BYGUYEV, IS REFERRED TO AS A SPECIALIST IN SPACE MEDICINE. THE ASTRONAUT'S DAILY RATION CONSISTS OF: BREAKFAST, 100 GS OF CARBONATE, 50 GS OF BREAD, 50 GS OF CHOCOLATE COATED PRALINE CANDY, 150 GS OF COFFEE WITH MILK, AND 128 GR OF BLACKBERRY JUICE; LUNCH, 100 GS OF TONGUE, 50 GS OF BREAD, AND 60 GS OF PRUNES WITH NUTS; DINNER, 15 GS OF DRIE ROACH, 165 GS OF BORSCH, 100 GS OF VEAL, 50 GS OF BREAD, 40 GS OF COFFEE CAKE, AND 128 GS OF BLACKBERRY JUICE; SUPPER, 165 GS OF COTTAGE CHEESE WITH BLACKBERRY PUREE, 50 GS OF CANDIED ORANGE PEEL, AND 128 GS OF BLACKBERRY JUICE. THE FIRST COURSE OF EACH DINNER (SUCH AS BORSCH, CABBAGE SOUP, SPINACH SOUP) COMES IN TUBES AND IS HEATED UP TO 60-65DEGREESC IN A SPECIAL HEATING UNIT. TO SATISFY PERSONAL PREFERENCES OF ASTRONAUTS, THE MENU CONTAINS THREE TYPES OF BREAD AND OTHER SUBSTITUTES. DIFFERENT DISHES ARE SERVED EACH DAY FOR THREE DAYS. THE CALORIC CONTENT OF A DAILY RATION IS ABOUT 2,600 KCAL.

UNCLASSIFIED

1/2 016
TITLE--FOR THOSE WHO ARE IN SPACE ^{UNCLASSIFIED}
AUTHOR--BYGUYEV, V. 
COUNTRY OF INFO--USSR
SOURCE--SOVETSKAYA, LITVA, JUNE 10, 1970, P 3, COLS 5-7
DATE PUBLISHED-----70
PROCESSING DATE--11SEP70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SPACE MEDICINE, DIET, COSMONAUT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0805
STEP NO--UR/9020/70/000/000/0003/0003
CIRC ACCESSION NO--AN0104245
UNCLASSIFIED

2/2 016

UNCLASSIFIED


PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0104245

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN THE INTRODUCTION TO THE ARTICLE WHICH DEALS WITH THE ASTRONAUT'S DIET, ITS AUTHOR, BYGUYEV, IS REFERRED TO AS A SPECIALIST IN SPACE MEDICINE. THE ASTRONAUT'S DAILY RATION CONSISTS OF: BREAKFAST, 100 GS OF CARBONATE, 50 GS OF BREAD, 50 GS OF CHOCOLATE COATED PRALINE CANDY, 150 GS OF COFFEE WITH MILK, AND 128 GR OF BLACKBERRY JUICE; LUNCH, 100 GS OF TONGUE, 50 GS OF BREAD, AND 60 GS OF PRUNES WITH NUTS; DINNER, 15 GS OF DRIE ROACH, 165 GS OF BORSCH, 100 GS OF VEAL, 50 GS OF BREAD, 40 GS OF COFFEE CAKE, AND 128 GS OF BLACKBERRY JUICE; SUPPER, 165 GS OF COTTAGE CHEESE WITH BLACKBERRY PUREE, 50 GS OF CANDIED ORANGE PEEL, AND 128 GS OF BLACKBERRY JUICE. THE FIRST COURSE OF EACH DINNER (SUCH AS BORSCH, CABBAGE SOUP, SPINACH SOUP) COMES IN TUBES AND IS HEATED UP TO 60-65DEGREESC IN A SPECIAL HEATING UNIT. TO SATISFY PERSONAL PREFERENCES OF ASTRONAUTS, THE MENU CONTAINS THREE TYPES OF BREAD AND OTHER SUBSTITUTES. DIFFERENT DISHES ARE SERVED EACH DAY FOR THREE DAYS. THE CALORIC CONTENT OF A DAILY RATION IS ABOUT 2,600 KCAL.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--DRYING NORMAL PROPYL ALCOHOL WITH SYNTHETIC ZEOLITES -U-
AUTHOR--(03)-SHCHERBAKOVA, P.R., MAKUSHKINA, A.I., BYK, S.SH. 
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 41
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PROPANOL, ZEOLITE, ADSORPTION, WATER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1882 STEP NO--UR/0318/70/000/002/0041/0041
CIRC ACCESSION NO--AP0112862
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NU--AP0112862

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROH, CONTG. 0.22-1.90 WT. PERCENT WATER, WAS PASSED AT 20DEGREES AND VELOCITY 0.31 AND 0.28 CM PER MIN THROUGH A BED OF 19.5 AND 23 CM HIGH AND 2.87 1.76 CM PRIME2 OF KA AND NAA ZEOLITES, WITH DYNAMIC ACTIVITY TO WATER 12.2 AND 14.7PERCENT, RESP., TO GIVE PROH WITH 0.002PERCENT WATER CONTENT. THE ADSORBENT COULD BE REGENERATED BY HEATING 12 HR AT 370-400DEGREES.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ZEOLITE GAS PHASE EQUILIBRIUM IN A PROPANE ETHYLENE SYSTEM --
AUTHOR--(02)-SHCHERBAKOVA, P.R., BYK, S.SH.
COUNTRY OF INFO--USSR
SOURCE--GAZOV. PROM. 1970, 15(1), 41-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ZEOLITE, PHASE EQUILIBRIUM, PROPANE, ETHYLENE, GAS STATE, GAS ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1121 STEP NO--UR/0492/70/015/001/0041/0042
CIRC ACCESSION NO--AP0128548
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128548

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. C SUB2 H SUB4 NEGATIVE C SUB3 H SUB8 MIXTS. DRIED BY PASSAGE THROUGH KA ZEOLITE IN AN ADSORBER WERE ADMITTED AT A RATE OF 1.5 ML-MIN AT 20DEGREES INTO AN 8 MM DIAM. COLUMN CONTG. A 65 MM LAYER OF N DRIED CAA ZEOLITE OF 0.5-2.0 MM PARTICLE SIZE UNTIL EQUIL. WAS ATTAINED. THE ADSORBENT WAS GRADUALLY HEATED TO 400-500DEGREES, AND THE DESORBED GAS WAS ANALYZED. RELATIVE VOLATILITY COEFFS. WERE CALCD. FROM DATA ON C SUB2 H SUB4 CONC. IN THE ADSORBATE AND GAS PHASES AND ADSORPTION EQUIL. CURVES WERE PLOTTED WHICH SHOWED AN "AZEOTROPIC POINT" WHEN THE MOLE FRACTION OF C SUB2 H SUB4 WAS 0.89.

UNCLASSIFIED

USSR

UDC 621.314.61

ZASORIN, S.N., BABAYEVA, V.M., BYKADOROV, A.L.

"Experimental Investigation Of The Possible Use Of A Shunting Thyristor For Protection From Overvoltages Of The Silicon Rectifiers Of Static Converters"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Works Of The Moscow Institute Of Railway Transportation Engineers), 1970, Issue 340, pp 36-42 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B676)

Translation: The results are presented of an experimental investigation of the possibility of protection from overvoltages of the fundamental [semiconductor] rectifiers of the rectifier of a booster device, which is connected in series with a contact net with the aid of shunting thyristors. 4 ill. 1 tab. 6 ref. Summary.

1/1

USSR

KONCHALOVSKAYA, N. M., POPOVA, T. B., and BYALKO, N. K.

"Toxic-Chemical Injury of the Liver"

V sb. Tekhn. Progress i Gigiyena Truda (Technical Progress and Labor Hygiene), Moscow, 1973, pp 84-88 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73, Abstract No 24F 2156)

Translation: A short review devoted to the problems and methods of the functional differential diagnosis of the toxic liver injuries (a test with ¹³¹I tagged dye Bengal Rose, billirubinemia, activity of serum enzymes, protein metabolism, etc). It was noted that with toxic hepatitis, the elevation of the activity of aminotransferases was manifested oftener and much stronger than any changes of other enzymes (pseudoCE, aldolase, alkaline and acid phosphatase).

1/1

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USSR

UDC 621.383.932

BYKH, A. I., KHUDENSKIY, YU. K., YEVSEYEV, F. YA.

"Representation Procedures with Digital Control of the Display Elements"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Instruments and Systems. Republic Interdepartmental Thematic Scientific and Engineering Collection), 1971, vyp. 17, pp 128-133 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A460)

Translation: A study was made of prospective methods of representation which can theoretically be used to build display units. A classification of them is proposed, and a detailed analysis of the representation procedures with digital control of the display elements is presented. Possible areas of application of the display units are isolated. There is 1 table and a 17-entry bibliography.

1/1

USSR

UDC 542.61:546.791

BYKHOTSOV, V. L.

"Extraction of Uranium (VI) and Trichloroacetic Acid (TCAA) With Normal Primary Alcohols"

Leningrad, Radiokhimiya, Vol 14, No 1, 1972, pp 165-166

Abstract: The partition coefficients for U (VI) and TCAA were determined and compared with the same parameters for the system $\text{HNO}_3 - \text{UO}_2(\text{NO}_3)_2 - \text{H}_2\text{O} -$ extractant.

Partition Coefficients α of U, TCAA, and HNO_3

$(C_U = 1.55 \times 10^{-2} \text{M}, C_{\text{TCAA}} = C_{\text{HNO}_3} = 1\text{M})$

1/3

- 10 -

USSR

BYKHOTSOV, V. L., Radiokhimiya, Vol 14, No 1, 1972, pp 165-166

EXTRACTANT	α_U		$\frac{\alpha_1}{\alpha_2}$	α_{TCAA}	α_{HNO_3}	$\frac{\alpha_{TCAA}}{\alpha_{HNO_3}}$
	TCAA	HNO ₃				
n-butyl alcohol	1.74	0.071	24.51	7.66	0.36	21.3
n-hexyl alcohol	0.65	0.0065	100.00	6.55	0.1	66.5
n-heptyl alcohol	0.59	0.0056	105.36	5.60	0.065	86.1
n-octyl alcohol	0.44	0.0045	97.77	5.10	0.043	118.6
diethyl ether	0.19	0.013	14.61	8.7	0.071	122.5
cyclohexanone	3.55	0.5	7.10	13.2	0.26	50.8
tributyl phosphate	63.12	13.5	4.67	32.2	0.78	41.3

Experimental conditions were $V_0/V_v = 1$; temperature, 20 ± 2°C; contact time of phases, 5 min. A number of generalities can be observed in the table: 1) The extraction efficiency increases going from the nitric acid solution to TCAA. 2) The partition coefficients for the systems $CCl_3COOH - UO_2(CCl_3COO)_2 - H_2O$ or $H_2O + HNO_3 -$ alcohol decrease with increasing atomic weight of the alcohol. 3) The ratio $\alpha_1 : \alpha_2$ is related to the chemical properties of the extractant and increases in the order tributylphosphate < ketone < ether

USSR

BYKHOTSOV, V. L., Radiokhimiya, Vol 14, No 1, 1972, pp 165-166

< alcohol. 4) The reagents studied extract from TCAA more effectively than from nitric acid. 5) In the series of alcohols the ratio $\alpha_{TCAA} / \alpha_{HNO_3}$ increases in the order butanol < hexanol < heptanol < octanol. The U(VI) is extracted from the HNO_3 system as the hydrated dinitrate complex and from the TCAA system as the neutral trichloroacetate complex. The high extractability of uranium trichloroacetate in relation to the nitrate appears to be determined by the increase concentration of the neutral forms of the complexes in the aqueous solutions and possibly the role of the water of hydration during salting out. This may also play a part in the case of the ethers.

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USSR

UDC 542.61:546.791

BYKHOTSOV, V. L.

"Extraction of Uranium (VI) and Trichloroacetic Acid (TCAA) With Normal Primary Alcohols"

Leningrad, Radiokhimiya, Vol 14, Vyp 1, 1972, pp 165-166

Abstract: The partition coefficients for U (VI) and TCAA were determined and compared with the same parameters for the system $\text{HNO}_3 - \text{UO}_2(\text{NO}_3)_2 - \text{H}_2\text{O} -$ extractant.

Partition Coefficients α of U, TCAA, and HNO_3
($C_U = 1.55 \times 10^{-2}\text{M}$, $C_{\text{TCAA}} + C_{\text{HNO}_3} = 1\text{M}$)

α_U

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BYKHOTSOV, V. L., Radiokhimiya, Vol 14, Vyp 1, 1972, pp 165-166

EXTRACTANT	TCAA	HNO ₃	$\frac{\alpha_1}{\alpha_2}$	α_{TCAA}	α_{HNO_3}	$\frac{\alpha_{TCAA}}{\alpha_{HNO_3}}$
butanol	1.74	0.071	24.51	7.66	0.36	21.3
hexanol	0.65	0.0065	100.00	6.55	0.1	66.5
heptanol	0.59	0.0056	105.36	5.60	0.065	86.1
diethyl ether	0.44	0.0045	97.77	5.10	0.043	118.6
cyclonhexanone	0.19	0.013	14.61	8.7	0.071	122.5
tributyl phosphate	3.55	0.5	7.10	13.2	0.26	50.8
	63.12	13.5	4.67	32.2	0.78	41.3

Experimental conditions were $V_o:V_v = 1$; temperature, $20 \pm 2^\circ\text{C}$; contact time of phases, 5 min. A number of generalities can be observed in the table: 1) The extraction efficiency increases going from the nitric acid solution to TCAA. 2) The partition coefficients for the systems $\text{CCl}_3\text{COOH} - \text{UO}_2(\text{CCl}_3\text{COO})_2 - \text{H}_2\text{O}$ or $\text{H}_2\text{O} + \text{HNO}_3$ - alcohol decrease with increasing atomic weight of the alcohol. 3) The ratio $\alpha_1:\alpha_2$ is related to the chemical properties of the extractant and increases in the order tributylphosphate < ketone < ether < alcohol. 4) The reagents studied extract from TCAA more effectively than 2/3

USSR

BYKHOTSOV, V. L., Radiokhimiya, Vol 14, Vyp 1, 1972, pp 165-166

from nitric acid. 5) In the series of alcohols the ratio $\alpha_{TCAA}:\alpha_{HNO_3}$ increases in the other butanol < hexanol < heptanol < octanol. The U(VI) is extracted from the HNO_3 system as the hydrated dinitrate complex and from the TCAA system as the neutral trichloroacetate complex. The high extractibility of uranium trichloroacetate in relation to the nitrate appears to be determined by the increase concentration of the neutral forms of the complexes in the aqueous solutions and possibly the role of the water of hydration during salting out. This may also play a part in the case of the ethers.

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USSR

UDC 542.61:546.791

BYKHOTSOV, V. L.

"Synergism in the Extraction of Thorium from Nitric Acid Solutions by an Equimolar Mixture of Di-(2-Ethylhexyl)phosphinic Acid and Tri-n-Butyl Phosphate in Kerosine" (Letter to the Editor)

Leningrad, Radiokhimiya 12, No 3, 1970, pp 539-540

Abstract: The synergism coefficient S was calculated for the extraction of thorium from nitric acid solutions by a 0.1M solution of di-(2-ethylhexyl) phosphinic acid (DEHP), a mixture of 0.1 DEHP and 0.1M tri-n-butylphosphoric acid (TBP), and 0.1M TBP (solvent in all cases: kerosine). Study of the extraction isotherms showed that the synergism in the system $\text{HNO}_3\text{-Th}(\text{NO}_3)_4\text{-DEHP-TBP}$ is apparent also in the magnitude of the thorium saturation of the organic phase. To the saturation range of the organic phase corresponds the formula $[\text{Th}(\text{NO}_3)_2 \cdot \text{Th}(\text{NO}_3)_4 \cdot 3\text{TBP}]$, where X^- represents the anion of DEHP. It was found that thorium, in the presence of nitrate ions, is synergistically extracted by an equimolar mixture DEHP-TBP also from solutions of sulfuric, hydrochloric, and perchloric acid.

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USSR

UDC 669.721.472(088.8)

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CHEPRASOV, I. M., SELEDTSOV, D. K., CHIKODANOV, A. I., BESTAUBAYEV, M. B.,
PEYSAKHOV, I. L., and BYKHOVER, L. N.

"Method of Purifying Waste Gases"

USSR Author's Certificate No. 267586, Filed 12/05/68, Published 14/07/70,
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract
No.1 G171 P).

Translation: A method is suggested for purifying waste gases to remove Cl_2 and Cl_2 -containing products by transmitting the gases through inorganic reagents. In order to increase the degree of purification and simplify the process, the inorganic reagents used are wastes of Ti and its alloys in the form of fine sponge or chips. Example. The gases pumped from the cathode space of a magnesium electrolyzer, at 360° , containing 5-6 mg/l Cl_2 , are passed without preliminary drying to a layer of crushed, unheated titanium sponge. The sponge is heated by the gases themselves to $250-280^\circ$. All of the Cl_2 contained in the gases is trapped by the sponge, forming lower chlorides of Ti, which are then dechlorinated to produce TiCl_4 .

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USSR

UDC 541.182.2/3

YAVORSKIY, I. A., TEREHENIN, A. N., and BYKOV, A. P., Institute of Physical Chemical Principles of the Processing of Raw Mineral Material, Novosibirsk

"Precipitation of Aerosols in a Medium Supersaturated With Water Vapor"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, No 8 (203), Jun 72, pp 86-92

Abstract: Highly dispersed aerosols may be precipitated very effectively out of the gaseous phase by cooling the dusty gasses saturated with water vapor in a fine gage nozzle. The effectiveness of the aerosol precipitation on the condensation-diffusion filter depends on the specific quantity of the condensing moisture, velocity of the gas, the type, width and height of the condenser, nozzle channels and on the initial dust content of the gas. The laminated nozzle appears to be the most reasonable type of nozzle for the condenser. The precipitation of aerosol particles and drops in a condensation-diffusion nozzle takes place principally on account of the diffusion forces.

1/1

USSR

UDC 632.95

BERIM, N. G., and BYKHOVETS, A. I.

"Particulars of Separate and Combined Action of Insecticides and Benzimidazole Derivatives on Lepidoptera"

Zap. Leningr. s.-kh. in-ta (Notes of Leningrad Agricultural Institute), 1972, 180, pp 33-36 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N429)

Translation: The effect which benzimidazole derivatives (preparation No 2) has on the toxic activity of insecticides (sevin, phthalophos, fozalon,) is determined on tent caterpillars, gypsy moth larvae and cabbage cutworms. The insecticides cause a sharp decrease in the content of lipids in the body of the caterpillars, and reduce their weight. Preparation No 2 reduces the toxic effect of the insecticides and improves the physiological condition of the caterpillars as compared with variants where the insecticides alone were used. T. A. Belyayeva.

1/1

Entomology

USSR

UDC 577.150.4:595.787

BERIM, N. G., and BYKHOVETS, A. I., Chair of Agricultural Entomology,
Leningrad Agricultural Institute, Pushkin

"The Effect of Organophosphorus Insecticides and Sevin on the Activity of
Digestive Enzymes in Lepidoptera"

Leningrad, Entomologicheskoye Obozreniye, Vol 50, No 2, 1971, pp 335-340

Abstract: Larvae of the last instar of *Malacosoma neustria*, *Porthetria*
dispar, and *amestra brassicae* were poisoned by intraintestinal introduction
of sevin, ftalofos, fozalon, or mixtures of sevin with ftalofos or fozalon.
The pH in the middle intestine of the larvae first decreased and then increased,
showing phase changes. The activity of amylase, proteinases, lipases, and
sucrose in larvae intestines decreased as a result of insecticide treatment.
The degree to which the activity of the enzymes was reduced depended on the
insect species and on the insecticide used.

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Organophosphorous Compounds

USSR

UDC 632.95

KNUNYANTS, I. L., BYKHOVSKAYA, E. G., SIZOV, YU. A., ZINOV'YEVA, L. I.

"A Method of Making Alkyl Perfluorovinylalkylphosphinates"

USSR Author's Certificate No 297644, filed 22 Dec 69, published 1 Jun 71
(from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N412)

Translation: Compounds of the general formula $R(R'O)P(O)CF=CF_2$ (I) ($R = Me, Et; R' = Pr, Bu$) are made by the reaction of dialkyl chlorophosphonates with perfluoromagnesium iodide (II) in an organic solvent at -15 to $20^\circ C$. A solution of $Me(iso-Pr)POCl$ in 10 ml of absolute ether is added with stirring, in a stream of N_2 , to a solution of II obtained from 2.5 g Mg and 24 g $CF_2=CFI$ at -15 to $20^\circ C$, and the mixture is stirred for an hour at $-10^\circ C$; the temperature is then raised to $-5^\circ C$, and the mixture is decomposed with a 10% H_2SO_4 solution.

The reaction mixture is heated to $20^\circ C$. The ether layer is removed, the water layer is extracted with ether and dried over Na_2SO_4 . After distilling the solvent, the result is 3.2 g of I ($R = Me, R' = iso-Pr$), yield 30%, boiling point $55^\circ/3$, $d_4^{17} 1.2689$, $n_D^{17} 1.3952$. An similar method is used for synthesizing compound I ($R = Me, R' = iso-Bu$), yield 30-35%, boiling point $51-2^\circ/3$, $d_4^{22} 1.2087$, $n_D^{22} 1.3908$. A. F. Prokof'yeva.

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USSR

UDC 547.241.07

KNUNYANTS, I. L., BYKHOVSKAYA, E. G., SIZOV, Yu. A., and FILYAKIN, V. A...

"A Method of Making 1,1-Bis-(dialkylphosphino)-4-alkanols-1"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289098, division C, filed 24 Nov 69, published 8 Dec 70, p 78

Translation: This Author's Certificate introduces: 1. A method of making 1,1-bis-(dialkylphosphino)-4-alkanols-1. As a distinguishing feature of the patent, dialkylphosphine is interacted with a 4-carboxylic acid halide in the presence of an organic base such as triethylamine in an organic solvent with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out with boiling off the reaction mixture.

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USSR

UDC 543.27:625.512

PEREGUD, YE. A., BYKHOVSKAYA, M. S. (deceased), and GERNET, YE. V.

"Rapid Methods for Determination of Harmful Substances in Air"

Moscow, "Khimiya" Publishing Company, 1970

Abstract: The apparatus, methods of sampling and rapid methods for the determination of toxic substances in air are described in this book. Domestic and foreign-made gas analyzers, both stationary and portable ones are described as well as methods for the preparation of mixtures with known gas composition for calibration of the instruments and testing the methodology. The book is intended for workers in scientific research institutes, sanitation-epidemiologic and gas-safety stations, plant laboratories and other organizations involved in atmospheric studies. There are 142 figures, 12 tables and 377 literature references in the book.

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Analytical Chemistry

USSR

UDC 543.27:628.512

PEREGUD, YE. A., BYKHOVSKAYA, M. S. (Deceased), and GERNET, YE. V.

"Rapid Methods for Determination of Harmful Substances in Air"

Moscow, "Khimiya" Publishing Company, 1970

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PEREGUD, YE. A., et al., "Rapid Methods for Determination of Harmful Substances in Air"

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1. Conversion of volume concentration (1:1 000 000, 1 p.p.m.) to weight concentration (mg/l) for gasses and vapors
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3. Maximum permissible concentrations of noxious gasses vapors, dust and other aerosols in air of the working zone of industrial buildings (SN 2455-63)

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UDC 621.357.13.035.4:532.64

BYKHOVSKIY, A. I.

"The Influence of the Electric Field on the Contact Phenomena at the Boundary Between the Liquid Metal and Solid Surface in the Electrolyte"

Smachivaemost' i poverkhnostn. svoystva rasplavov i tverd. tel. (Wettability and Surface Properties of Melts and Solid Bodies), Kiev, Nauk. Dumka, 1972, pp 174-176 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L213 by A. D. Davydov)

Translation: The different cases of contact of the three phases were examined. If one of the phases is an electrolyte and the others exhibit electrical conductivity, then the manner of their polarization may change the wettability or the driving force of spreading the three-phase systems examined. The systems considered in this work have a practical value, for example, in the process of de-greasing metals, impregnating porous pressed objects of non-conducting materials with a metallic binder and others.

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USSR

UDC 548.52

BRUK, V. B., BYKHOVSKIY, A. I., LARIKOV, L. N., and FAL'CHENKO, V. M.

"The Effect of the Geometry of Growth of α -Sn Crystals on the Kinetics of Transformation of White Tin Into Gray"

Kiev, Metallofizika, No 32, 1970, pp 113-118

Translation: The general kinetics of the $\beta \rightarrow \alpha$ transformation of the high-purity OVCh-000 (99.9995%) tin on specimens of various forms, i.e., massive in the form of small cubes, plates, and wire, was investigated by the method of hydrostatic weighing.

The overall rate of the polymorphic $\beta \rightarrow \alpha$ transformation adheres to Avrami's equation

$$X = 1 - \exp(-At^k),$$

where X is the share of the transformed volume; A and k are the constants. At the same time, k depending on the form of specimens assumes various values: 2.3-2.7 for massive specimens, 1.5-2 for specimens in the form of plates, and 1 for the specimens in the form of wire of a diameter less than 0.8 mm.

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UDC 621.039.58

BYKHOVSKIY, A. V., et al.

~~Problems of Protection~~ from Ionizing Radiation in Radiation Chemistry,"
M, Atomizdat 1970, 280 pp (Authors: BYKHOVSKIY, A. V., LARICHEV, A. V.,
and CHISTOV, Ye. D.)

Abstract: The book reports a short characteristic of the basic principles of radiation chemistry, radiation protection and dosimetry, as well as factors of nonradiation protection in research and industrial installations.

Conditions are described for protection from external radiation and methods for preventing the penetration of radioactive material into organisms during the work of radiation-chemical plants, recommendations are proposed for the organization of radiation protection service.

The book is aimed at a broad circle of readers -- engineering and technical personnel of radiation-chemical installations, workers in the area of industrial health.

44 Tables. 41 Illustrations. Bibliography -- 378 references.
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BYKHOVSKIY, A. V., et al., "Problems of Protection from Ionizing Radiation in Radiation Chemistry," M, Atomizdat 1970, 280 pp.

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